



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,433	03/15/2004	Gregory Murphy	5838-00205	1763
35690	7590	10/31/2008		
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.			EXAMINER	
P.O. BOX 398			SETH, MANAV	
AUSTIN, TX 78767-0398				
			ART UNIT	PAPER NUMBER
			2624	
			MAIL DATE	DELIVERY MODE
			10/31/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/800,433	MURPHY ET AL.	
	Examiner	Art Unit	
	MANAV SETH	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 156, 157 and 495-566 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 156, 157, 495-526, 528 and 531-566 is/are rejected.
- 7) ☒ Claim(s) 527, 529 and 530 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/22/05, 1/28/05, 11/1/04, 7/30/04, 7/27/04, 3/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 514, 515-518, 550 and 551-554 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 514, 515, 550 and 551, applicant claims creating a "second image of the human heart tissue" but in order to have a second heart tissue image there must be a first image created prior to creating a second image. There is no reference to a first image being created in this claim. The claim is vague and indefinite. Please make appropriate correction.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

Art Unit: 2624

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

4. Claims 157 and 531-566 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 157 and 531-566 defines a carrier medium embodying functional descriptive material (i.e., a computer program or computer executable code). However, the claim does not define a “computer-readable medium or computer-readable memory” and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on “computer-readable medium” or equivalent; assuming the specification does NOT define the computer readable medium as a “signal”, “carrier wave”, or “transmission medium” which are deemed non-statutory (refer to “note” below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Note:

“A transitory, propagating signal ... is not a “process, machine, manufacture, or composition of matter.” Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter.” (In re Nuijten, 84 USPQ2d 1495 (Fed. Cir. 2007)). Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a “signal”, the claim as a whole would be non-statutory. Should the applicant’s specification define or exemplify the computer readable medium or memory (or whatever language applicant chooses to recite a computer readable medium equivalent) as statutory tangible products such as a hard drive, ROM, RAM, etc, **as well as** a non-statutory entity such as a “signal”, “carrier wave”, or “transmission medium”, the examiner suggests amending the claim to include the disclosed tangible computer readable storage media, while at the same time excluding the intangible transitory media such as signals, carrier waves, etc.

Merely reciting functional descriptive material as residing on a “tangible” or other medium is not sufficient. If the scope of the claimed medium covers media other than “computer readable” media (e.g., “a tangible media”, a “machine-readable media”, etc.), the claim remains non-statutory. The full scope of the claimed media (regardless of what words applicant chooses) should not fall outside that of a computer readable medium.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 156, 157, 495, 496, 531 and 532 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duran et al., U.S. Patent No. 6,491,511, further in view of Bradbury et al. U.S. Patent Publication. US2002/0007294 A1.

Regarding claims 156 and 157, these claims recite a system for “creating a pattern of at least a portion of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart”. Duran discloses “the present invention is in the field of equipment and devices related to manufacturing heart valves to be used in cardiac surgery (col. 1, lines 6-10). Duran further discloses the use of echocardiograms (heart images which includes a heart valve tissues of the heart) data in order to make or construct a custom replacement heart valve (patient specific heart implant/instrument) (col. 6, lines 50-65) but does not expressly provide the details of how such patient specific implant would be created using the heart images data, which details would further include creating a pattern of at least a portion of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart. Therefore, examiner cites Bradbury to provide the details of the implant construction. Bradbury discloses “a CPU; and a system memory coupled to the CPU, wherein the system memory stores on or more computer programs executable by the CPU (paragraph 0014 – the use of computer where CPU being an inherently required part of the computer and para 0015 -different memories).

Bradbury further discloses “the present invention is directed to the preparation of rapid-prototyped implantable biomedical devices manufactured using a patient’s own diagnostic imaged data” (para. 0013). Bradbury further discloses “the present invention provides a new method of rapid design and manufacture of biomedical implants using electronic data and modeling transmissions. **The method includes the steps of capturing patient anatomical data,**

converting the data to a computer file, converting the computer file into a multi-dimensional model and then into machine instructions, and finally manufacturing the medical device such as an implant” (para 0014).

Bradbury further discloses capturing patient anatomical data – “in manufacturing customized implants or devices, the starting point is patient-specific information 100 obtained from various non-invasive or invasive procedures. Non-invasive procedures from which patient data may be obtained include diagnostic or radiological data such as magnetic resonance imaging (MRI) scans, computerized tomography (CT) scans, ultrasounds or nuclear medicine procedures or mammography procedures (para 0016). Bradbury further discloses “Patient data from, for example, **MRI or CT scans is normally presented as sets of two-dimensional images (sections) showing all of the patient’s tissues....**CT scans are considered better for imaging hard tissue such as bone, and MRI scans are considered better for **imaging soft tissue**” (para 0019). Bradbury further discloses “the diagnostic scans may need further processing which may include distinguishing between hard and soft tissue...in the two-dimensional planes or sections in which the MRI or CT scans typically are presented...this initially processed data may further be converted to a form that geometrically represents a multi-dimensional form representing an object...”(para 0020). Bradbury further discloses “Once a multidimensional model has been created from the diagnostic data, the multidimensional model essentially becomes just another data set or mathematical object capable of being further processed or manipulated by typical CAD software” (para 0022). Bradbury further discloses that the patient specific implant could be designed for **soft tissues** (para 0076, last 2 lines). Thus, from the above citation, **the multidimensional CAD model being the pattern created of at least patient specific instrument or implant using images of the patient tissues.**

Bradbury does not explicitly disclose the image being an image of heart tissue from a human heart, but, as cited before, Bradbury does disclose that the patient specific implant could be designed for soft tissues based on tissue images (para 0076, last 2 lines) and as well known heart is nothing but a structure of soft tissues. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention was made to combine the teachings of Duran and Bradbury to create a pattern of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart because both Duran and Bradbury are directed to the same field of constructing a patient specific body implant and directed to the same field of constructing a patient specific body implant and Bradbury provides the details of a method and system which creates a computer model/pattern of the implant according to patient specifics from the tissue images of different parts of the body, thus providing a versatile method and system to provide any kind of computer model/pattern for any kind of human implants, which model would further provide the user with additional manipulation capabilities to improve the geometrical accuracy of the implant, if required, and further adding, such a computer model/pattern could easily be converted into machine instructions to facilitate automated construction of the implant. (see Bradbury – para 0015).

Regarding claims 495 and 531, Bradbury discloses the pattern is created automatically by at least one of the computer programs based on at least some user input (para 0025 – CAD software allows manipulation).

Regarding claims 496 and 532, Bradbury discloses dividing at least one image into a plurality of sections (para 0020 – distinguishing the image between hard and soft tissues thus dividing the image into plurality of sections or areas).

7. Claims 156, 157, 495-502, 510-514, 521-526, 528, 531-538, 546-550, 557-562 and 564 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duran et al., U.S. Patent No. 6,491,511, further in view of D'Urso U.S. Patent No. 5,741,215.

Regarding claims 156 and 157, these claims recite system for “creating a pattern of at least a portion of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart”. Duran discloses “the present invention is in the field of equipment and devices related to manufacturing heart valves to be used in cardiac surgery (col. 1, lines 6-10). Duran further discloses the use of echocardiograms (heart images which includes a heart valve tissues of the heart) data in order to make or construct a custom replacement heart valve (patient specific heart implant/instrument) (col. 6, lines 50-65) but does not expressly provide the details of how such patient specific implant would be created using the heart images data, which details would further include creating a pattern of at least a portion of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart. Therefore, examiner cites D'Urso to provide the details of the implant construction.

D'Urso discloses patient specific implant construction which recites the steps of: “obtaining the scan data from an X-ray, MRI, PET scanner and is processed by conventional software to produce, initially, two dimensional boundary images of say, anatomical structure for each tomographic slice. The segmented data is then further processed by conventional contour or voxel methods to produce a three-dimensional data set for the anatomical pathology scanned. The three-dimensional data may be manipulated by conventional CAD software and this 3D model being the pattern of the at least a portion of the implant which is further used for the construction of the patient specific physical implant (col. 4, lines 14-36; col. 6, lines 29-48). D'Urso further discloses the

Art Unit: 2624

implants could be for anatomical structures could be hard tissues such as bone (col. 6, lines 31-33) and soft tissues such as aortic junction (arterial and vascular implants) (figure 6; col. 8, lines 45-67). D'Urso does disclose that the patient specific implant could be designed for soft tissues based on tissue images (aortic junction, arterial and vascular implants) (figure 6; col. 8, lines 45-67) and as well known heart is nothing but a structure of soft tissues and as discussed before, D'Urso uses the same method of determining the implant pattern for different kinds of body implants, for example bone and aorta junction. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention was made to combine the teachings of Duran and D'Urso to create a pattern of at least one patient-specific cardiac instrument or implant using at least one image of heart tissue from a human heart because both Duran and D'Urso are directed to the same field of constructing a patient specific body implant and D'Urso provides the details of a method and system which creates a computer model/pattern of the implant according to patient specifics from the tissue images of different parts of the body, thus providing a versatile method and system to provide any kind of computer model/pattern for any kind of human implants, which model would further provide the user with additional manipulation capabilities to improve the geometrical accuracy of the implant, if required, and further adding, such a computer model/pattern could easily be converted into machine instructions to facilitate automated construction of the implant.

Regarding claims 495 and 531, the combination of Duran and D'Urso discloses the pattern is created automatically by at least one of the computer programs on at least some user input (see D'Urso -col. 6, lines 29-44 – manipulated 3D model generated using CAD software, col. 8, lines 26-30).

Regarding claims 496 and 532, the combination of Duran and D'Urso discloses dividing at least one image into a plurality of sections (D'Urso – col. 7, lines 24-27 - segmenting the scanned image data into different regions of different tissues).

Regarding claims 497 and 533, the combination of Duran and D'Urso discloses the image comprises a plurality of features (Duran – col. 5, lines 1-10, col. 6, lines 50-65- the features being the heart valves with multiple cusps in the image, D'Urso – col. 7, lines 1-15, col. 8, lines 45-67 – the features being the cranial bone and aortic junction), and wherein at least one of the features comprises a physiological factor (D'Urso – col. 8, lines 45-55 – aortic junction wall thickness reduced or damaged, for example, by atherosclerosis and/or an aneurysm – represents a physiological factor associated with the feature).

Regarding claims 502 and 538, the combination of Duran and D'Urso discloses at least one of the implants comprises a valve (Duran – col. 5, lines 1-10, col. 6, lines 50-65- the heart valves).

Regarding claims 498-501 and 534-537, these claims recite, “wherein at least one of the implants comprises a reinforcing device, wherein the reinforcing device includes a patch; wherein at least one of the implants is a annuloplasty ring; and, one of the implants is a suture ”. The combination of Duran and D'Urso as discussed and cited in the rejection of claim 195 discloses that since the same method and system can be used to create a 2d and 3d model/pattern of anatomical structure implant for different kinds of body structures, therefore it would have been obvious to one of ordinary skill in the art at the time of invention was made to create a pattern/model of any implant such as a reinforcing device such as a patch, annuloplasty ring and suture, using the same

Art Unit: 2624

method and system as disclosed by the combination of Duran and D'Urso. The combination of Duran and D'Urso as cited before in the rejection of claim 195 teaches creating the pattern of the cardiac implants using the cardiac images of the implants but does not expressly teach such an implant to be a cardiac reinforcing device. However, the examiner here asserts that cardiac implants such as reinforcing device, annuloplasty ring and suture are very well known cardiac implants (Official Notice Taken). Reinforcing device is used to provide reinforcement of the heart wall during diastolic chamber filling to prevent or reduce cardiac dilation in patients and reinforcing device as a "patch" provides reinforcement of the heart wall at a localized area, such as a cardiac aneurysm or at an area of the myocardium which has been damaged due to myocardial infarction. Annuloplasty ring is an implant that is used to dictate the shape and contour of the mitral valve. Suture is a stitch used to hold tissues together.

Regarding claims 503-509, 519-520, 539-545 and 555-556, these claims are dependent on claims 156 and 157 and recite patient specific cardiac instruments. Claims 156 and 157 are Markush claims and these claims recite the consideration of either patient specific cardiac instruments or patient specific cardiac implants. Therefore, as per the merits of these independent claims examiner selects patient specific cardiac implants for the purposes of the examination. Claims 503-509, 519-520, 539-545 and 555-556 recite patient specific cardiac instruments and are therefore not selected for the purposes of the examination.

Regarding claims 510 and 546, the combination of Duran and D'Urso discloses extrapolating at least a portion of at least one feature from at least one image of human heart tissue (Duran- col. 6, lines 50-65, Duran discloses extrapolating or estimating the size of the heart valve and its cusps in

the echocardiograms; D-Urso – col. 8, lines 44-55- D’Urso discloses using two dimensional scan images estimating a region of the wall thickness in patient’s aortic junction to prepare the implant)

Regarding claims 511-512 and 547-548, these claims have been similarly analyzed and rejected as per claim 510 and 546, since the feature is in the images (echocardiograms).

Regarding claim 513 and 549, the combination of Duran and D’Urso discloses wherein at least one of the features comprises a numerical feature (Duran- col. 6, lines 50-65 – calculating the size of heart valve and its cusps, where size being the numerical feature).

Regarding claim 514 and 550, these claims recite using two images of the tissue creating at least a portion of three-dimensional image of the tissue. The combination of Duran and D’Urso discloses creating a 3D representation of the tissue using at least two images (D’Urso – col. 4, lines 24-33).

Regarding claims 521-524 and 557-560, these claims have been similarly analyzed and rejected as per claims 510-513 and 546-549.

Regarding claims 525 and 561, claims 525 and 561 recites “at least one of the computer programs is further executable to assess a volume of at least a portion of the heart tissue”. The combination of Duran and D’Urso as disclosed in the rejection of claims 156 and 157, teaches generating a 3-dimensional pattern data of the anatomical structure (heart tissue) from which a physical implant is created. Examiner here asserts that any physical implant that is created inherently

has a volume and therefore, in order to create something that has volume, volume of that thing has to be assessed in the model and is further represented in the 3d model itself in this case as discussed.

Regarding claims 526 and 562, these claims recites “wherein at least one of the computer programs is further executable to compare a contrast between two or more sections in at least one image; and assess a viability of the heart tissue”. The combination of Duran and D’Urso as disclosed in the rejection of the claims 156 and 157, disclose that the information from the anatomical images (tissue images) can be used to generate a model/pattern for the patent-specific tissue implant. The combination of Duran and D’Urso further teaches that using the same image information the reason for constructing the implant can also be known i.e. the defective/damaged tissues can be identified for which the implant is needed (D’Urso – col. 4, lines 40-64; col. 8, lines 44-55). Thus the combination of Duran and D’Urso does teach of assessing a viability of the tissues in the images but the combination of Duran and D’Urso does not expressly teach comparing a contrast between two or more sections in at least one image to assess the viability of the tissues in the image. However, examiner here asserts that it is very well known in the medical imaging art to use a contrast to differentiate between different portions of the image (official notice taken) (for example, to detect the damaged tissue portion or abnormality in the tissue – the abnormal part of the tissue would clearly have a different contrast than a normal part of the tissue). Thus contrasting would clearly and remarkably segment the abnormal part of the tissue from the normal part in a natural way and when used in this combined invention of Duran and D’Urso before the implant pattern is generated would make it easier to identify the reason for the implant (defect) and thus, it would have been obvious for one of ordinary skill in the art at the time of invention to use the contrast to differentiate between different sections in the image, to assess viability of the tissue.

Regarding claims 528 and 564, Duran discloses evaluating a curvature of at least a section of a portion of a heart comprising the heart tissue and assessing a shape of at least the portion of heart (col. 6, lines 50-65 – Duran discloses assessing shape for the heart valves can be done by determining the size and shape of the valve from the heart valve image and further teaches the curvature (geometry) of such valve can be determined from the shape and dimensions of their mating surfaces (col. 5, lines 50-55)).

8. Claims 515-518, 527, 529-530, 551-554, 563 and 565-566 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, after all 35 USC 101 and 112 rejection issues have been resolved. The following is an examiner's statement of reasons of allowance: the combination of Duran and D'Urso does not teach the subject matter as recited in these claims.

Examiner note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings for the art and are applied to the specific limitations within the individual claim, other passages and figures may be applied as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references entirely as potential teachings all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella, can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Manav Seth/
Examiner, Art Unit 2624
October 27, 2008